

DIGITAL TIME BASE CORRECTOR

TBC-80

COMPACT SIZE,
HIGH PERFORMANCE TBC



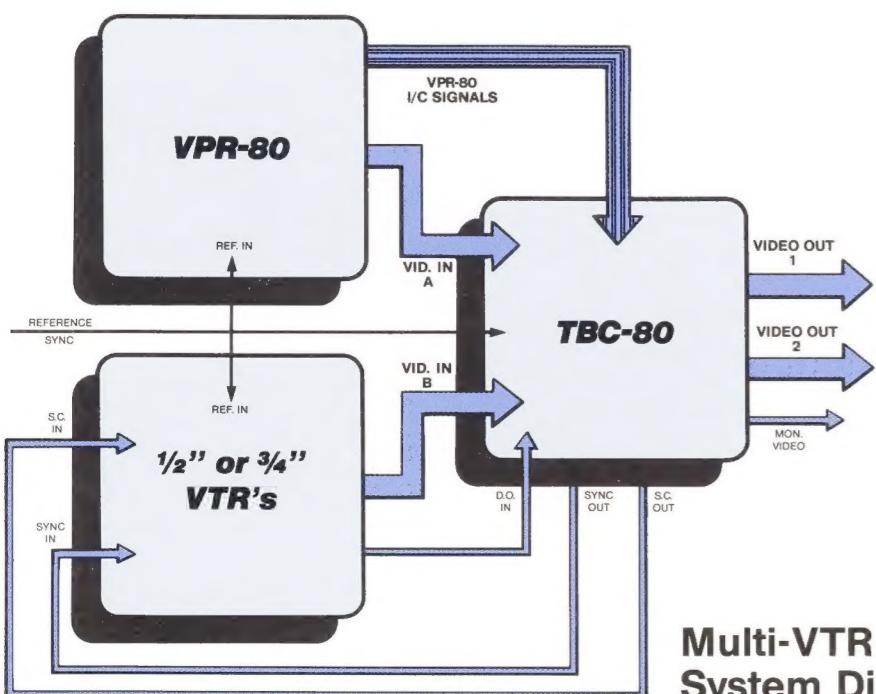
AMPEX

TBC-80 . . . Full Performance Digital Time Base Correction For "C" Format Direct or Heterodyne Processing

The TBC-80 was designed with two principal goals in mind. First, companionship with the VPR-80 videotape recorder. To achieve this perfect match, the TBC-80 was required to provide the ultimate in reliability and consistency of performance over a wide range of timebase error inputs.

With the VPR-80, the TBC-80 delivers broadcast-stable, transition-free slow motion playback . . . from still frame up to 1.5X play speed. In shuttle, the TBC-80's error processing circuitry provides viewable monochrome pictures up to 300 ips, in both forward and reverse.

A second goal of the TBC-80's design was to provide professional quality heterodyne video processing for capstan servoed $\frac{1}{2}$ " and $\frac{3}{4}$ " ENG/EFP recorders.



A multi-featured Digital TBC with many designed-in advantages

TBC-80's technical design uses 4XFsc A/D sampling, with 8 bits of amplitude accuracy for transparent conversion to digital processing. The memory size of 16 horizontal lines pro-

vides a wide correction window for slow motion playback and even the wildest gyroscopic errors from ENG portable recorders.

Full-color dropout compensation and a line-by-line velocity error corrector are built in and included as standard on all units. The TBC-80's color SCH phased sync generator includes fully adjustable horizontal and vertical blanking circuitry.

SCH-phase stability

Using the stability of an SCH-phased design, automatic vertical centering circuitry ensures consistent and repeatable picture positioning. An edit-ready LED indicator is included to confirm off-tape color frame accuracy.

Time-shared playback Correction

The TBC-80 can even time-share playback correction between the VPR-80 and heterodyne recorders making maximum use of your equipment when "dubbing up" from ENG equipment to the one-inch "C" format.

Full adjustment range

The TBC-80's output processing circuitry provides a full range of adjustment of composite video signal amplitudes, including independent video and chroma gain controls, chroma phase, subcarrier phase, horizontal phase and black level controls.

Retains image quality

To ensure optimum operation of the A/D converter, a video input level control can be used to adjust the amplitude of the input video signal. This ensures maximum retention of image quality.



The VPR-80/TBC-80 combination is a compact VTR system for "C" format quality.

Designed for easy maintenance access

While the TBC-80 is designed for long-term, drift-free operation, maintenance access is made easy should servicing ever be required. The TBC-80

uses a bus-structured backplane mother board for interconnecting the four large (12" x 19") printed wiring assemblies. This unique design permits fully interchangeable card slot positions to facilitate servicing.



In the case of a fault, the suspected PWA is moved to the top card position, making troubleshooting of individual components extremely simple. All printed wiring assemblies use sectional silk screen identification of PWA areas to further assist in troubleshooting.

TBC-80 SPECIFICATIONS

	NTSC 525/60	PAL 625/50
VIDEO SIGNAL PERFORMANCE		
Bandwidth:	Flat to 4.2 MHz ($\pm .2$ dB)	Flat to 5.5 MHz ($\pm .2$ dB)
Signal-To-Noise Ratio ¹ :	56 dB	56 dB
Differential Gain ² :	2%	3%
Differential Phase ² :	2°	3°
Transient Response (2T Pulse):	1% K Factor	1% K Factor
DIGITAL TIME BASE PERFORMANCE		
A/D Sampling Frequency	14.3 MHz (4xFsc)	17.7 MHz (4xFsc)
Quantizing Levels	256 levels (8 bits)	256 levels (8 bits)
Correction Window	28 horizontal lines	28 horizontal lines
Digital Memory Size:	32 horizontal lines	32 horizontal lines
Residual Output Error ³	±10 nsec monochrome ±2.5 nsec color	±20 nsec monochrome ±3 nsec color
NTSC 525/60 AND PAL 625/50		
INPUT SIGNALS		
Video Inputs A & B	1V ± 2 dB Composite Video (75Ω)	
Reference Video	1V ± 2 dB Composite Video (Loop or 75Ω)	
Dropout Compensator	R.F. or TTL Dropout Pulse (Dropout = Low) .1 to 2 volts	
OUTPUT SIGNALS		
Video Outputs (2)	1V Composite or Non-Composite (75Ω)	
Monitor Video Output	1V Composite (75Ω)	
VTR Advance Reference	.3V Color Black or 4V TTL or 4V Vertical Drive (75Ω)	
Sync Coherent Subcarrier Out:	1V Subcarrier (75Ω)	
GENERAL		
Size:	21 in (533 mm) W x 6 in (152 mm) H x 17 in (432 mm) D	
Weight:	40 lbs. (18 kg)	
Power Requirements:	50 to 60 Hz, Single phase, 150 watts 90 VAC to 140 VAC or 190 VAC to 250 VAC	
Operating Environment:		
Temperature:	0° to 45 °C	
Humidity:	10% to 90% RH (Non Condensing)	

Note 1: VTR-TBC system signal-to-noise ratio is determined primarily by VTR performance, e.g.
47 dB VTR S/N = 46.5 dB System S/N. This gives an equivalent TBC S/N ratio of 56 dB.

Note 2: Measured using a non-synchronous, subcarrier, modulated ramp with subcarrier amplitude equal to that of the color burst.

Note 3: Residual output error is directly dependent on the S/N of the input signal. Specification based on an input S/N of 47 dB.

Ampex reserves the right to make product and specification changes at any time without notice.

AMPEX Ampex Corporation, Audio-Video Systems Division

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